

## UNIVERSAL ORION 240 EC

## MATERIAL SAFETY DATA SHEET

### 1. PRODUCT & COMPANY IDENTIFICATION

**Product Name:** ORION 240 EC  
 Herbicide  
**UN No.:** 1993  
**Company:** Universal Crop Protection (Pty) Ltd.  
**Co. Reg. No.:** 1983/008184/07  
 PO Box 801,  
 Kempton Park, 1620, South Africa  
**Telephone:** (011) 396 2233  
**Fax:** (011) 396 4666  
**Website:** [www.villacrop.co.za](http://www.villacrop.co.za)

**Emergency telephone numbers:**  
**24 Hr Transport / Spill emergency no:**

Bateleur: +27 86 199 9071  
 (Client: Villa Crop Protection)

**Poisoning:**

Griffon Poison Information Centre +27 82 446 8946  
 Western Cape Poisons +27 861 555 777  
 Tygerberg Hospital +27 21 931 6129

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

**Common Name:** Oxyfluorfen  
**Chemical Name:** 2-chloro- $\alpha,\alpha$ -trifluoro-*p*-tolyl 3-ethoxy-4-nitrophenyl ether (IUPAC)  
**CAS No.:** [42874-03-3]  
**Chemical Family:** Diphenyl ether  
**Chemical Formula:** C<sub>15</sub>H<sub>11</sub>ClF<sub>3</sub>NO<sub>4</sub> (Mol. wt.: 361.7)  
**Use:** A selective contact herbicide for the control of annual broad-leaved weeds and grasses  
**Formulation:** Oxyfluorfen: 240 g/l  
 Emulsifiable Concentrate (Liquid)  
**Hazardous Ingredient:** Oxyfluorfen, xylene  
**Symbol:** F, Xn  
**Indication of danger:** Flammable, Harmful.  
**Risk phrases:** R10, R20, R36/37/38, R41, R50, R61, R67.

### 3. HAZARD IDENTIFICATION

**Likely routes of exposure:** Inhalation, eye contact, skin contact & dermal absorption.

**Inhalation:** Harmful. Inhalation of solvent vapour or spray mist can cause: irritation of nose, throat and lungs, headache. Nausea, dizziness, drowsiness, loss of coordination, stupor, central nervous system effects and unconsciousness.

**Eye:** Severe irritant and cause reddening of eyes and watering that may become copious, but should disappear once exposure has ceased. Lengthy exposure or delayed treatment may cause possible permanent injury.

**Skin:** Moderate skin irritant. Itchiness and reddening of skin may occur, but should disappear once exposure has ceased. Prolonged or repeated skin contact can cause defatting and drying of the skin, which leads to irritation and dermatitis. The solvent in this product can be absorbed through intact skin.

**Swallowed:** Data suggests the product is not harmful. If swallowed, the product may be irritating to mucous membrane. If large amounts are swallowed and aspiration occurs, chemical pneumonitis may develop. Small amounts of product aspirated into the respiratory system during ingestion or vomiting, due to the solvent in product, may cause mild to severe pulmonary injury.

### 4. FIRST AID MEASURES AND PRECAUTIONS

**Inhalation:** If vapours or mists have been inhaled, remove the source of contamination or move victim to fresh air. The patient should be kept under observation and obtain medical attention if irritation persists.

**Skin contact:** Remove contaminated clothing, shoes and leather goods. Wash skin gently and thoroughly with cold water and non-abrasive soap. Obtain medical attention if irritation persists.

**Eye contact:** Immediately flush the eyes with clean, gently flowing lukewarm water for at least 20 minutes, holding the eyelid(s) open. Obtain medical attention if irritation persists.

**Ingestion: Do not induce vomiting due to the solvent.** Do not give anything by mouth. Obtain medical attention immediately. If the person is alert, rinse mouth thoroughly with water.

**Advice on treatment:** There is no specific antidote available.

Treat symptomatically. The product contains solvent that may cause chemical pneumonitis if aspirated into lungs. Watch for delayed onset of pulmonary. If ingested, careful gastric lavage may be indicated.

### 5. FIRE FIGHTING MEASURES

**Fire and explosion hazard: Flash point: 37 °C** (Closed cup). Heated material can form **Flammable** or explosive vapours with air. Combustible. Combustion generates toxic fumes of hydrogen chloride, hydrogen fluoride and nitrogen oxides.

**Extinguishing agents:** Extinguish fires with carbon dioxide, dry powder, or alcohol-resistant foam. Water spray can be used for cooling of unaffected stock, but avoid water coming in contact with the product. Use as

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little water as possible. Use spray or fog. Solid stream may cause spreading. Contain water used for fire fighting for later disposal.

**Firefighting:** Remove spectators from surrounding area. Remove container from fire area if possible. Contain fire control agents for later disposal. Use a recommended extinguishing agent for the type of surrounding fire. Avoid inhaling hazardous vapours and fumes from burning materials. Keep upwind.

**Personal protective equipment:** Heated material can form **Flammable** or explosive vapours with air. Combustion generates toxic fumes of hydrogen chloride, hydrogen fluoride and nitrogen oxides. Fire fighters and others that may be exposed should wear full protective clothing and self-contained breathing apparatus.

### 6. ACCIDENTAL RELEASE MEASURES (SPILLAGE)

**Personal precautions:** Avoid contact with skin and eyes. Do not breathe in spray or fumes. For personal protection see Section 8.

**Environmental precautions:** Do not allow entering drains or watercourses. Spillage or uncontrolled discharges into water courses (or public waters) to be reported immediately to the Police and to the Department of Water/Environmental Affairs. Considered a Marine Pollutant.

**Occupational spill:** Remove all sources of flames and sparks. For small liquid spills, soak up with lime, damp earth or sand, or other non-combustible absorbent material and place into containers for later disposal. For large liquid spills, contain the liquid for later disposal. In situations where product comes in contact with water, contain contaminated water for later disposal. Do not flush spilled material into drains. Keep spectators away.

### 7. HANDLING AND STORAGE REQUIREMENTS

**Handling:** Do not use near source of sparks or open flame. Harmful by inhalation, skin or eye contact. Avoid inhalation of spray and vapour and contact with eyes and skin. Use with adequate ventilation. Wash hands before eating, drinking, chewing gum, smoking, or using the toilet. Operators should change and wash clothing daily. Remove clothing immediately if the herbicide gets inside. Then wash skin thoroughly using a non-abrasive soap and put on clean clothing. Do not apply directly to areas where surface water is present, or to intertidal areas below the mean high water mark. Water used to clean equipment must be disposed of correctly to avoid contamination.

**Storage:** Do not store near sources of sparks, flame or heat. Keep out of reach of unauthorised persons, children and animals. Store in its original labelled container in isolated, dry, cool and well-ventilated area. Not to be

stored next to foodstuffs and water supplies. Local regulations should be complied with.

### 8. EXPOSURE CONTROL / PERSONAL PROTECTION

It is essential to provide adequate ventilation. The measures appropriate for a particular work site depend on how this material is used and on the extent of exposure. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire, and other applicable regulations.

#### PERSONAL PROTECTIVE EQUIPMENT:

If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal protective equipment including approved respiratory protection.

**Respirator:** An approved respirator suitable for protection from mists of pesticides is adequate. Limitations of respirator use specified by the approved agency and the manufacturer must be observed.

**Clothing:** Employee must wear appropriate protective (impervious) clothing and equipment to prevent repeated or prolonged skin contact with this substance.

**Gloves:** Employee must wear appropriate synthetic protective gloves to prevent contact with this substance.

**Eye protection:** The use of safety goggles is recommended.

**Emergency eyewash:** Where there is any possibility that an employee's eyes may be exposed to this substance; the employer should provide an eye wash fountain or appropriate alternative within the immediate work area for emergency use.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Amber homogeneous, emulsifiable liquid, without coagulation.

**Odour:** Weak chemical odour.

**Flammability:** **Flammable**

**Flash point:** 37 °C (closed cup)

**Combustion properties:** Combustible.

**Solubility:** Forms an emulsion in water.

**pH:** 6.5 of a 1% aqueous emulsion.

**Density:** 1.005 to 1.02

### 10. STABILITY AND REACTIVITY

**Stability:** Stable. Avoid contact with heat, sources of ignition (e.g. sparks, open flames and heated surfaces).

**Storage stability:** Stable for a period of 2 years under normal warehouse conditions, well-ventilated cool and dry place.

**Conditions and Materials to Avoid:** Protect from sunlight, open flame and sources of heat. Avoid contact

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with acids, bases, amines, oxidizing agents, halogens and molten sulphur.

**Hazardous decomposition products:** Thermal decomposition may produce hydrogen chloride and hydrogen fluoride.

### 11. TOXICOLOGICAL INFORMATION

**Acute oral LD<sub>50</sub>:** *Technical* in rats: >5000 g/kg

**Acute dermal LD<sub>50</sub>:** *Technical* in rats: > 5 000 mg/kg in rats

**Inhalation:** Formulation is Harmful.

LC<sub>50</sub> in rats: > 22.64 mg/ℓ (4 hours).

**Acute skin irritation:** *Formulation:* Severe irritant.

**Acute eye irritation:** *Formulation:* Moderate irritant.

**Dermal sensitisation:** May be a skin sensitizer. Prolonged or repeated skin contact will defatt the skin and may cause dermatitis.

**Chronic Effects:** Effects on liver have observed in long-term feeding studies with rats, mice and dogs.

**Mutagenicity:** Mutagenicity tests have produced mixed results. However, unscheduled DNA synthesis assays have been negative. Due to the conflicting results, it is not possible to determine the mutagenic potential of **Oxyfluorfen**.

**Reproductivity:** It does not appear likely that **Oxyfluorfen** will cause reproductive effects in humans at likely levels of exposure.

**Teratogenicity:** Data suggest that **Oxyfluorfen** may have teratogenic effects at very high doses.

**Carcinogenicity:** Data suggest that **Oxyfluorfen** is not carcinogenic.

### 12. ECOLOGICAL INFORMATION

**Mobility, Degradability & Accumulation:** The soil **Oxyfluorfen** is moderately persistent in most environments, with half-life of about 30 to 40 days.

The main mechanisms of degradation may be photodegradation and evaporation/codistillation.

**Oxyfluorfen** is very well sorbed to most soils and not readily removed. **Oxyfluorfen** did not leach below 4 inches in any soil, except in sand.

In water, **Oxyfluorfen** is rapidly decomposed by light. Because **Oxyfluorfen** is nearly insoluble in water and has tendency to adsorb to soil, it will be sorbed to suspended particles or sediment.

Very little movement of **Oxyfluorfen** within treated plants. It is not readily metabolised by plants, but since it is not readily taken up by roots, residues in plants are generally very low.

**Oxyfluorfen** is highly hydrophobic, and therefore may have the potential to bio concentrate in animal fatty tissues. Bio- concentration Factor (BCF) of 1300. Results

indicate a low to moderate potential for bioaccumulation in aquatic species.

### ECOTOXICOLOGY:

Non-toxic to birds. Highly toxic to fish, aquatic organisms and plants. Not toxic to bees.

#### Birds:

Oral LD <sub>50</sub> :	Bobwhite quail:	> 2200 mg/kg
	Mallard ducks:	> 4000 mg/kg
LC <sub>50</sub> (8 day diet):	Bobwhite quail:	> 5000 ppm
	Mallard ducks:	> 4000 ppm

#### Fish:

LC <sub>50</sub> (96 hours):	Bluegill sunfish:	200 µg/ℓ
	Rainbow trout:	410 µg/ℓ
	Channel fish:	400 µg/ℓ

#### Bees:

Oral LD <sub>50</sub> :	> 10 000 ppm
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### 13. DISPOSAL CONSIDERATION

**Pesticide and container disposal:** Open dumping or burning of this pesticide is prohibited. Never pour untreated waste or surplus products into public sewers or where there is any danger of run-off or seepage into water systems. Do not contaminate rivers, dams or any other water sources with the product or used containers. Product is a Marine Pollutant.

Emptied containers retain vapour and product residues. Observe all labelled safeguards until container is destroyed. **TRIPLE RINSE** empty containers in the following manner: Invert the empty container over the spray or mixing tank and allow draining for at least 30 seconds after the flow has slowed down to a drip. Thereafter rinse the container three times with a volume of water equal to a minimum of one third of that of the container. Add the rinsing to the contents of the spray tank before destroying the container in the prescribed manner. Do not re-use the empty container for any other purpose but destroy it by perforation and flattening and bury in an approved dumpsite. Prevent contamination of food, feedstuffs, drinking water and eating utensils.

### 14. TRANSPORT INFORMATION

<b>UN NUMBER:</b>	1993
<b>Road Transport ADR/RID:</b>	
Class:	3
Packaging group:	III
Shipping name:	<b>Flammable liquid, N.O.S.</b> ( <b>Oxyfluorfen 240 g/ℓ</b> )
<b>Maritime Transport IMDG/IMO:</b>	
Class:	3.3
Packing group:	III
Shipping name:	<b>Flammable liquid, N.O.S.</b> ( <b>Oxyfluorfen 240 g/ℓ</b> )

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Considered a marine pollutant.

## 15. REGULATORY INFORMATION

<b>Symbol:</b>	F, Xn
<b>Indication of danger:</b>	<b>Flammable; Harmful</b>
<b>Risk phrase(s):</b>	
<b>R 10</b>	<b>Flammable</b>
<b>R 20</b>	Harmful by inhalation.
<b>R 36/37/38</b>	Irritating to eyes, respiratory system and skin.
<b>R 41</b>	Risk of serious damage to eyes.
<b>R 50</b>	Very toxic to aquatic organisms.
<b>R 61</b>	May cause harm to the unborn child.
<b>R 67</b>	Vapours may cause drowsiness and dizziness.
<b>Safety phrases:</b>	
<b>S 2</b>	Keep out of the reach of children.
<b>S 13</b>	Keep away from food, drink and animal feedstuffs.
<b>S 16</b>	Keep away from sources of ignition – No smoking.
<b>S 23</b>	Do not breathe vapour/spray.
<b>S 24/25</b>	Avoid contact with skin and eyes.
<b>S 36/37/39</b>	Wear suitable protective clothing, gloves and eye/face protection.
<b>S 61</b>	Avoid release to the environment. Refer to special instructions/safety data sheets.

## 16. OTHER INFORMATION

**Packaging:** Packed in 1, 5, 10, 12, 15, 20, 25 and 50 litres fluorinated plastic containers and labelled according to South African regulations and guidelines.

**Disclaimer:** The information on this sheet is not a specification; it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage use of the product. It is not applicable to unusual or non-standard uses of the product nor where instructions or recommendations are not followed.

All information is given in good faith but without guarantee in respect of accuracy, and no responsibility is accepted for errors and omissions or the consequence thereof.

### END OF DOCUMENT

**Compiled:** January 2004  
**Reviewed:** August 2018  
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**Next revision:** August 2021

For detailed information on revisions, contact the Registration holder.